

*Jpn. J. Ent.*, 63(4): 781–797. December 25, 1995

## Revisional Notes on the Japanese Sepsidae (Diptera)<sup>1)</sup>

Mitsuhiro IWASA

Laboratory of Entomology, Obihiro University of Agriculture and  
Veterinary Medicine, Obihiro, Hokkaido, 080 Japan

**Abstract** The thirty-five species belonging to 11 genera of Japanese Sepsidae are reviewed with a comprehensive key for identification. *Themira kanoi* is described as new to science: this species is identical with *T. paludosa* sensu IWASA, nec Elberg. A formerly known species, *Themira nigricornis* MEIGEN is proven to be *T. lutulenta* OZEROV. *Ortalischema maritima* OZEROV and *Sepsis bicornuta* OZEROV are newly recorded from Japan.

**Key words:** Diptera; Sepsidae; revision; new species; new records; Japan.

### Introduction

The family Sepsidae is known from all zoogeographic regions. The adult flies are commonly found on excrement, dung, manure heap and other decaying matter. The Palaearctic species have been studied mainly in the western and central Palaearctic Region by DUDA (1925), HENNIG (1949), ELBERG (1963), SOÓS (1972), ZUSKA (1974), PONT (1979) and ZUSKA & PONT (1984). In the Far East, the Japanese species have been reported by FUKUHARA (1963) and IWASA (1980, 1981, 1984 and 1985), and comprise 11 genera and 33 species. Thereafter, OZEROV (1985a, 1985b, 1986a, 1986b and 1989) has published the species of the Russian Far East and IWASA *et al.* (1994) reported the South Korean species. In the course of advance of study in the sepsid fauna of the Far East, the recent re-examination and collection of the Japanese species resulted in findings of misidentifications and newly recorded species.

In the present paper, the author revises the Japanese species and deals with 35 species belonging to 11 genera including a new species and 3 newly recorded species.

### Key to the Japanese genera and species

1. First and second basal cells united .....2
- First and second basal cells separated .....4
2. Scutellum as long as width, upper surface flat, with 2 pairs of strong apical

---

<sup>1)</sup> Contribution No. 160 from the Laboratory of Entomology, Obihiro University of Agriculture and Veterinary Medicine.

- and basal scutellar setae; fronto-orbital setae developed  
 .....*Saltella sphondylii* SCHRANK
- Scutellum less than half as long as width, upper surface slightly convex, with  
 2 pairs of small basal and strong apical scutellar setae; fronto-orbital setae  
 very small.....*Australosepsis* MALLOCH.....3
3. Wing with a diffused dark spot at the end of vein  $R_{2+3}$  .....  
 .....*A. niveipennis* (BECKER)
- Wing without a diffused dark spot at the end of vein  $R_{2+3}$  .....  
 .....*A. frontalis* (WALKER)
4. Outer vertical setae absent .....5
- Outer vertical setae present .....11
5. Scutellum longer than half as long as width, with 2 pairs of strong apical and  
 basal scutellar setae; postvertical setae absent...*Ortalischema* FREY...6
- Scutellum less than half as long as width, with only pair of strong apical  
 scutellar setae; postvertical setae present .....  
 .....*Themira* ROBINEAU-DESVOIDY.....7
6. Male fore 2nd and 3rd tarsi distinctly compressed and thickened, and with  
 prominent setae on 2nd .....*O. albitarse* (ZETTERSTEDT)
- Male fore 2nd and 3rd tarsi not distinctly compressed, and without promi-  
 nent setae on 2nd .....*O. maritima* OZEROV
7. Mesopleural setae developed; male fore femur with 2 short ventral spines in  
 parallel near a median ventral tubercle .....*T. mesopleuralis* IWASA
- Mesopleural setae absent .....8
8. Humeral setae absent .....9
- Humeral setae present .....10
9. Femora and tibiae brown; a ventral spine which is located frontward of a  
 ventral tubercle of male fore femur straight. ....*T. kanoi* n. sp.
- Femora and tibiae black; a ventral spine which is located frontward of a  
 ventral tubercle of male fore femur bent outward ..*T. minor* HALIDAY
10. Pleura almost shining; male fore femur ventrally with a large median  
 tubercle and a developed basal spine .....*T. japonica* ZUSKA
- Sternopleuron wholly or partly pruinose.....11
11. Sternopleuron wholly pruinose; a median ventral spine of male fore femur  
 apically curved inward.....*T. putris* (LINNAEUS)
- Sternopleuron not wholly pruinose .....12
12. Sternopleuron centrally with a shining spot; male fore femur ventrally with  
 a stout spine in parallel with a median tubercle .....*T. saigusai* IWASA
- Sternopleuron with a shining spot at just upper part of middle coxa; male  
 fore femur without such stout spine .....*T. lutulenta* OZEROV
13. Thorax and abdomen dully shining; middle femur dorsally hollowed at  
 middle; large species .....*Toxopoda viduata* (THOMSON)

- Thorax and abdomen shining; middle femur not hollowed at middle ... 14
- 14. Humeral setae absent; male fore tibia deeply excavated at basal one-third  
.....*Decachaetophora aeneipes* (DE MEIJERE)
- Humeral setae present ..... 15
- 15. Fronto-orbital setae strong ..... 16
- Fronto-orbital setae small ..... 18
- 16. Postvertical setae present and acrostichal setae absent .....  
.....*Meroplius* RONDANI ..... 17
- Postvertical setae absent and small acrostichal setae present; male fore  
femur medially with 2 ventral spines which are convergent each other  
.....*Xenosepsis fukuharai* IWASA
- 17. Wing hyaline, slightly tinged with brown; ♂, distal one of 2 ventral spines  
of fore femur straight and a pair of hair tufts on 4th sternite not developed  
.....*M. minutus* (WIEDEMANN)
- Wing distinctly tinged with grey; ♂, distal one of 2 ventral spines of fore  
femur angularly bent outward and a pair of hair tufts on 4th sternite  
developed .....*M. fasciculatus* (BRUNETTI)
- 18. Fore femur in both sexes ventrally with short spinules in a pectinated row,  
further in male a row of longer spinules present in a line .....  
.....*Nemopoda* ROBINEAU-DESVOIDY ..... 19
- Male fore femur with complicated setae; female fore femur ventrally with-  
out spinules in a pectinated row ..... 20
- 19. ♂, Hind trochanter medially with 2 conspicuous black spines directed  
downward; fore femur with 2 rows of about 10 posteroventral setae and  
6 to 7 anteroventral minute spinules; anterobasal seta of fore femur strong  
.....*N. nitidula* (FALLÉN)
- ♂, Hind trochanter without black spines; fore femur with 2 rows about 13  
posteroventral setae and 10–13 anteroventral minute spinules; anterobasal  
seta of fore femur weak .....*N. pectinulata* LOEW
- 20. Abdomen of both sexes without distinct macrochaetae; wing without a dark  
spot at the end of vein  $R_{2+3}$ ; surstylus bifurcate at the tip .....  
.....*Dicranosepsis bicolor* WIEDEMANN
- Abdomen almost all in male, and often in female also, with distinct macro-  
chaetae; wing with or without a dark spot at the end of vein  $R_{2+3}$ ;  
surstylus not bifurcate at the tip .....*Sepsis* FALLÉN ..... 21
- 21. Wing without a dark spot at the end of vein  $R_{2+3}$  ..... 22
- Wing with a dark spot at the end of vein  $R_{2+3}$  ..... 25
- 22. Sternopleuron anteroventrally shining; a median ventral tubercle of male  
fore femur with 5–6 spinules .....*S. lateralis* WIEDEMANN
- Sternopleuron wholly pruinose ..... 23
- 23. Pteropleuron pruinose; a median ventral tubercle of male fore femur fairly

- lengthened .....*S. indica* WIEDEMANN  
 — Pteropleuron shining .....24  
 24. Male surstylus short and slender; male fore femur ventrally with a median  
 tubercle bearing 3 spinules .....*S. nitens* WIEDEMANN  
 — Male surstylus long and stout; male fore femur without such distinct median  
 tubercle .....*S. coprophila* DE MEIJERE  
 25. Abdomen of both sexes without distinct macrochaetae; male middle and  
 hind femora with long ventral hair .....*S. duplicata* HALIDAY  
 — Abdomen of male usually, and often female also, with distinct macrochae-  
 tae; male femora without such hair .....26  
 26. Sternopleuron at least anteroventrally shining .....27  
 — Sternopleuron wholly pruinose .....28  
 27. Sternopleuron almost shining, only dorsal margin pruinose; male fore femur  
 with anterobasal patch of hairs .....*S. albopunctata* LAMB  
 — Sternopleuron anteroventrally shining and posterodorsally pruinose; male  
 fore femur without anterobasal patch of hairs .....  
 .....*S. thoracica* (ROBINEAU-DESVOIDY)  
 28. Dorsocentral setae one pair, if two pairs, anterior pair small .....29  
 — Dorsocentral setae two pairs .....31  
 29. Male surstylus slender and pointed apically, and with a distinct process  
 pointing inward at base .....*S. bicornuta* OZEROV  
 — Male surstylus not slender and apically rounded, and without a distinct  
 process at base .....30  
 30. Male fore femur with a strong anterobasal seta; basal part of male surstylus  
 not constricted in lateral view .....*S. monostigma* THOMSON  
 — Male fore femur with a weak anterobasal seta; basal part of male surstylus  
 constricted in lateral view .....*S. punctum* (FABRICIUS)  
 31. Male fore femur with a small tubercle bearing a minute spinule at distal  
 one-third; male surstylus long and slender .....*S. violacea* MEIGEN  
 — Male fore femur without such a tubercle .....32  
 32. Male surstylus long and slender .....33  
 — Male surstylus short and small .....34  
 33. Male fore femur with two median ventral setae; male fore tibia ventrally  
 hollowed at basal one-third .....*S. cynipsea* LINNAEUS  
 — Male fore femur with one median ventral seta; male fore tibia not hollowed  
 at basal one-third .....*S. neocynipsea* MELANDER et SPULER  
 34. Legs yellowish; male fore femur with a row of ventral setae at distal  
 one-third; male surstylus short and thick .....*S. flavimana* MEIGEN  
 — Legs blackish; male fore femur with two rows of ventral setae at distal  
 one-third; male surstylus short and slender .....*S. nigripes* MEIGEN

*Saltella sphondylii* (Schränk)

Japanese name: Kita-tsuyahosobae

*Trupanea sphondylii* SCHRANK, 1803, Fauna boica 3: 149.*Saltella sphondylii*: Hennig, 1949, Flieg. palaearkt. Reg. 5(1): 30.*Distribution.* Holarctic Region; Japan (Hokkaido).*Ortalischema albitarse* (ZETTERSTEDT)

[Japanese name: Shiroashi-tsuyahosobae]

(Figs. 1-3)

*Sepsis albitarse* ZETTERSTEDT, 1847, Dipt. Scand. 6: 2297.*Ortalischema albitarse*: FREY, 1925, Not. ent. 5: 75.

This species is characterized by having compressed and thickened male fore 2nd and 3rd tarsi, bearing prominent spines on 2nd (Figs. 2 and 3) in male. This species was collected from horse dung together with a next species, *O. maritima* Ozerov, but very rare.

*Specimen examined.* 1♂, Toyokoro, Tokachi, Hokkaido, 23 June 1992, M. IWASA.

*Distribution.* Europe, Russia (North European territory, Ukraina, East Siberia), Mongol; Japan (Hokkaido).

*Ortalischema maritima* OZEROV

[Japanese name: Shiroashi-toge-tsuyahosobae]

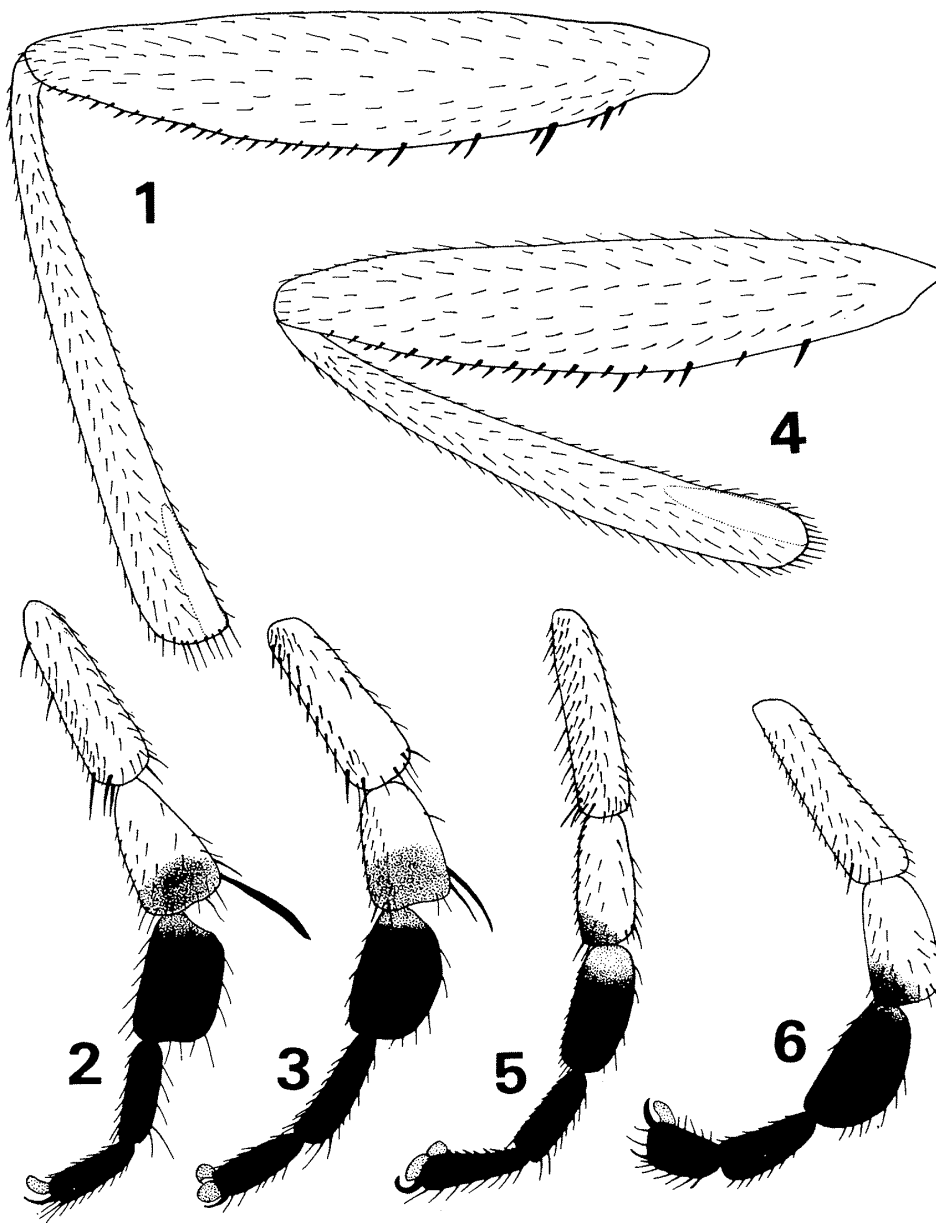
(Figs. 4-6)

*Ortalischema maritima* OZEROV, 1985, Zool. J. 64: 1268.*Ortalischema albitarse* IWASA, 1985, Kontyû 53: 632 (in part, nec ZETTERSTEDT, 1847.)

This species was once published as *Ortalischema albitarse* (ZETTERSTEDT) by IWASA (1985) on a basis of the Japanese specimens determined as *O. albitarse* by PONT; but these specimens were unfortunately females. As a result of re-examination of male specimens, this species was proven to be *Ortalischema maritima* OZEROV described from the Russian Far East (Primorski District). Illustrations of male genitalia were given by IWASA (1985). This species was also collected from horse dung.

*Specimens examined.* 9♂, 13♀, Toyokoro, Tokachi, Hokkaido, 23 June 1992, M. IWASA; 2♂, 1♀, Iwaouchi, Shibetsu, Nemuro, Hokkaido, 15-16 June 1974, K. NISHIDA.

*Distribution.* Russia (Far East: Primorski District); Japan (Hokkaido). New to Japan.



Figs. 1-3. *Ortalischema albitarse* (ZETTERSTEDT) — 1, male fore femur and tibia (right, anterior view); 2, male fore tarsi (left, anterior view); 3, ditto (right, posterior view).

Figs. 4-6. *Ortalischema maritima* OZEROV — 4, male fore femur and tibia (right, anterior view); 5, male fore tarsi (left, anterior view); 6, ditto (normal form).

**Remarks.** This species is closely related to *O. albitarse* (ZETTERSTEDT). OZEROV (1985) noted that male fore 2nd and 3rd tarsi of *O. maritima* are not thickened. In Japanese specimens there are two forms in male fore 2nd and 3rd tarsi, viz. a not thickened (normal) form (Fig. 5) and a slightly thickened and compressed form (Fig. 6). But *T. maritima* is easily distinguishable from *albitarse* in not having prominent setae on fore 2nd tarsus in male (Figs. 5 and 6).

*Themira japonica* ZUSKA

[Japanese name: Yamato-tsuyahosobae]

*Themira japonica* ZUSKA, 1974, Proc. ent. Soc. Wash. 76: 194.

**Distribution.** Russia (Far East: Primorski District); Japan (Hokkaido and Honshu).

*Themira kanoi* n. sp.

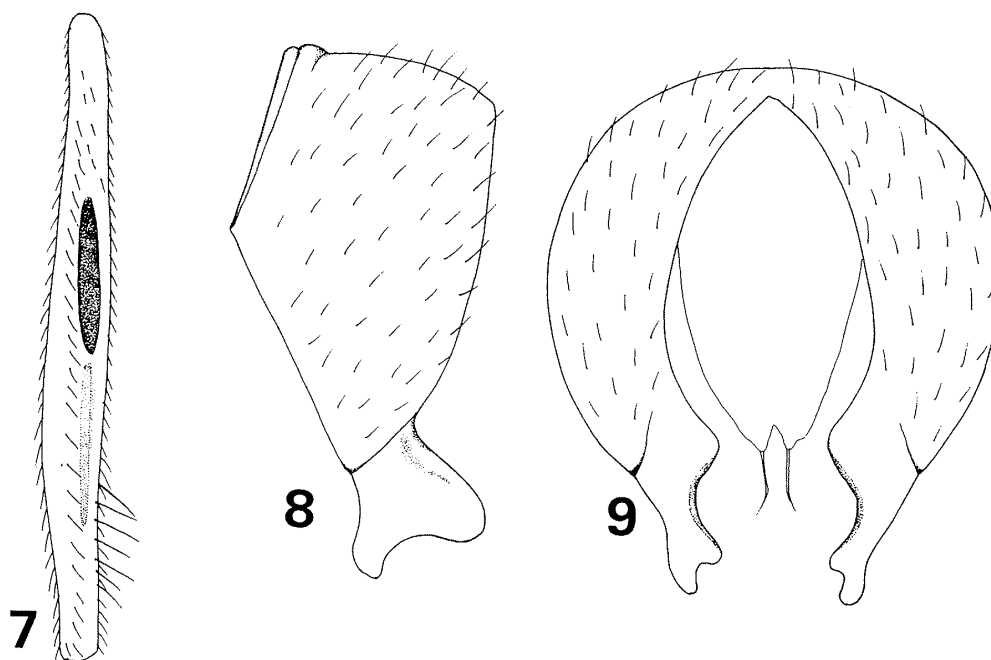
[Japanese name: Kano-tsuyahosobae]

(Figs. 7-9)

*Themira paludosa* IWASA, 1985, Kontyû 53: 634 (in part, nec ELBERG, 1963.)

**Male.** Head: eyes reddish brown; frons subshining, almost black, only anterior part reddish brown; face brown; facial orbit dark brown; gena dark brown to black; occiput black; 1st and 2nd antennal segments dark brown, 3rd segment reddish brown; arista black and bare; genal lower margin with more than 10 peristomal setae in a line; vibrissal angle with a distinct setae; 1 *or*, 1 *oc*, 1 *vti*, 1 *pvt*; *vte* absent.

Thorax: wholly black; mesonotum subshining and sparsely with hair-like bristles; humeral callus and propleuron subshining; mesopleuron almost shining,



Figs. 7-9. *Themira kanoi* n. sp. — 7, male hind tibia (left, posterior view); 8, male genitalia (left, lateral view); 9, ditto (posterior view).

only posterior margin subshining; pteropleuron shining in anterior half and slightly pruinose in posterior half; sternopleuron wholly pruinose; hypopleuron anteriorly shining; metapleuron, metanotum and scutellum subshining; 2 *n* (posterior one longer than anterior one); 1 *dc*, 1 *pa*, 1 *ap sc*, 1 *b sc* (short); *h*, *sa* and *m* absent. Wings: hyaline, slightly tinged with brown; veins brown; distal parts of veins *R*<sub>4+5</sub> and *M*<sub>1+2</sub> almost parallel; alula with distinct posterodistal lobe, bearing microtrichia marginally; halteres whitish, darkened basally. Legs: fore coxae yellow, middle and hind coxae yellow to dark brown; fore femur basally yellowish, distally dark brown and medially with a ventral projection, an anteroventral and a posteroventral black spines; middle and hind femora yellow to dark brown and without distinct setae; fore tibia with an anterior rounded projection bearing 2–4 setae at base; middle tibia brown without distinct setae; hind tibia anterodorsally with an osmeterium in length of one-fourth of tibia and followed by a trace of osmeterium (Fig. 7); all tarsi black.

Abdomen: tergites glossy black and sparsely with hair-like bristles; 2nd segment not constricted posteriorly; 4th sternite with a pair of long setal brushes; epandrium and surstylus as shown in Figs. 8 and 9.

*Female.* Fore femur and tibia without any projections or spines as seen in male; hind tibia without osmeterium; 4th abdominal sternite without a pair of setal brushes; other characters same as those of male.

Body length: ♂, 4–4.5 mm; wing length, 3 mm.

Holotype: ♂, Shibukawa, Shizuoka, 22 Aug. 1974, R. KANO (preserved in Obihiro University of Agriculture and Veterinary Medicine). Paratypes: 2♂, 3♀, same data as holotype.

*Distribution.* Japan (Honshu).

*Remarks.* This species was published under the name of *Themira paludosa* ELBERG by IWASA (1985). Thereafter, the author was pointed out that this Japanese species is possibly not *paludosa* by OZEROV who have examined the type of *T. paludosa* in Leningrad, Russia. On a careful re-examination, the author became to convince that this species is different from *paludosa* in the structures of fore femur and surstylus in male and is a new species.

### *Themira lutulenta* OZEROV

[Japanese name: O-tsuyahosobae]

(Fig. 10–12)

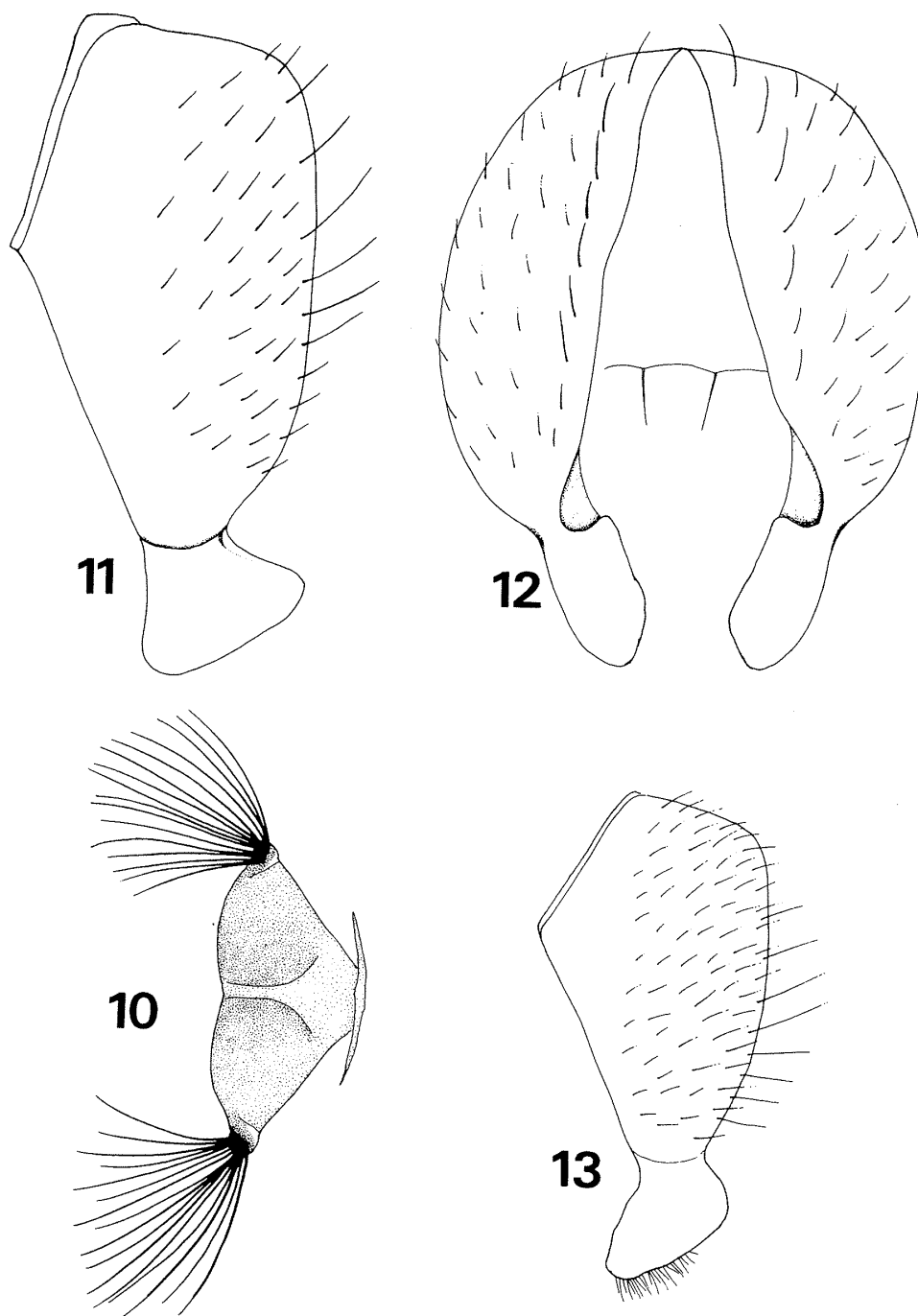
*Themira lutulenta* OZEROV, 1986, Ent. Obozr. 65: 641.

*Themira nigricornis* IWASA, 1981, Kontyû 49: 48 (in part, nec MEIGEN, 1826.)

Fukuhara (1963) and Iwasa (1981) recorded *Themira nigricornis* Meigen from Japan. Thereafter, OZEROV (1986) described *T. lutulenta* from the



Russian Far East (Primorski District); it is closely similar to *nigricornis*. Recently, the author got the type specimens of *lutulenta* from OZEROV. A careful comparison of the specimens revealed that the Japanese species is identical with



Figs. 10–12. *Themira lutulenta* OZEROV — 10, 4th abdominal sternite of male; 11, male genitalia (left, lateral view); 12, ditto (posterior view).

Fig. 13. Male genitalia (left, lateral view) of *Themira minor* HALIDAY.

*T. lutulenta* OZEROV. Male fore femur of this species was illustrated by IWASA (1981). The illustrations of male 4th abdominal sternite and male genitalia are given in Figs. 10 and 11–12, respectively.

*Specimens examined.* 30♂, 10♀, Kanazawa, Ishikawa Pref., 3 Apr. 1980, M. IWASA; 1♂, Hakodate, Hokkaido, 28 Mar. 1979, T. HAYASHI.

*Distribution.* Russia (Far East: Primorski District); Japan (Hokkaido and Honshu). New to Japan.

*Remarks.* This species is closely related to *Themira nigricornis* MEEIGEN, but differs from it in the structures of fore femur and surstylus in male, and in having a shiny spot on lower part of sternopleuron in both sexes.

*Themira mesopleuralis* IWASA

[Japanese name: Futatoge-tsuyahosobae]

*Themira mesopleuralis* IWASA, 1981, Kontyû 49: 51.

This species is very rare and no record since original description.

*Distribution.* Japan (Honshu).

*Themira minor* HALIDAY

[Japanese name: Koguro-tsuyahosobae]

(Fig. 13)

*Themira minor* HALIDAY, 1833, Ent. Mag. 1: 170.

*Distribution.* Palaearctic Region (Europe, Central Asia, Russia: North European territory to Far East), North Africa, Nearctic Region; Japan (Hokkaido).

*Remarks.* OZEROV (1985) described *Themira sabulicola* from the Russian Far East (Primorski District), which is closely similar to *T. minor* HALIDAY from Europe. In comparison of male genitalia of the type specimens of *sabulicola* and Japanese specimens (Fig. 13), the author confirmed that the Japanese species is *T. minor* HALIDAY. *T. minor* HALIDAY is distinguishable from *T. sabulicola* OZEROV by the shape of male surstylus and by not having apical long hairs on surstylus.

*Themira saigusai* IWASA

[Japanese name: Saigusa-tsuyahosobae]

*Themira saigusai* IWASA, 1981, Kontyû 49: 49.

This species is not common in mountainous areas.

*Distribution.* Japan (Hokkaido and Honshu).

***Toxopoda viduata* (THOMSON)**

[Japanese name: Ashinaga-tsuyahosobae]

*Sepsis viduata* THOMSON, 1869, Fregatten Eugenies Resa Zool. 2(1): 586.

*Toxopoda viduata*: ZUSKA, 1977, Catalog Dipt. Orient. Reg. 3: 75.

*Distribution.* China (Kwangtung), Hong Kong, Taiwan; Japan (Okinawa: Yonakuni Is.).

***Decachaetophora aeneipes* (DE MEIJERE)**

[Japanese name: Kuroashi-tsuyahosobae]

*Sepsis aeneipes* DE MEIJERE, 1911, Annls hist.-nat. Mus. natn. hung. 11: 119.

*Decachaetophora aeneipes*: DUDA, 1926, Annln naturh. Mus. Wien, 40: 45.

*Distribution.* Oriental and Nearctic Regions; Palaearctic Region: Russia (Far East), Afghanistan, China, Korea; Japan (Hokkaido, Honshu, Shikoku and Kyushu).

***Xenosepsis fukuharai* IWASA**

[Japanese name: Maeki-tsuyahosobae]

*Xenosepsis fukuharai* IWASA, 1984, Kontyû 52: 300.

*Distribution.* China (Manchuria), Russia (Far East), South Korea; Japan (Hokkaido, Honshu and Kyushu).

***Meroplius minutus* (WIEDEMANN)**

[Japanese name: Kita-maeki-tsuyahosobae]

*Sepsis minutus* WIEDEMANN, 1830, Auss. zweifl. Insekt. 2: 468.

*Meroplius minutus*: PONT, 1979, Handb. Ident. Brit. Ins. 10: 3.

*Distribution.* Holarctic Region, Nepal, Taiwan; Japan (Hokkaido, Honshu, Shikoku and Kyushu)

***Meroplius fasciculatus* (BRUNETTI)**

[Japanese name: Minami-maeki-tsuyahosobae]

*Sepsis fasciculatus* BRUNETTI, 1909, Rec. Ind. Mus. 3: 365.

*Meroplius fasciculatus*: ZUSKA, 1972, Acta ent. bohemoslov. 69: 64.

*Distribution.* Oriental Region, Papua New Guinea; Japan (Honshu, Shikoku and Kyushu).

*Nepomoda nitidula* (FALLÉN)

[Japanese name: Togeashi-miyama-tsuyahosobae]

*Musca cylindrica* FABRICIUS, 1794, Ent. Syst. 4: 336, preoccupied.

*Sepsis nitidula* FALLÉN, 1820, Dipt. Suec. Ortalid. p. 21.

*Nemopoda nitidula*: HENNIG, 1949, Flieg. palaearkt. Reg. 5(1): 49.

*Distribution.* Holarctic and Afrotropical Regions; Japan (Hokkaido).

*Nemopoda pectinulata* LOEW

[Japanese name: Miyama-tsuyahosobae]

*Nemopoda pectinulata* LOEW, 1873, Besch. Europ. Dipt. 3: 305.

*Distribution.* Palearctic Region, Nepal, Taiwan; Japan (Hokkaido, Honshu, Shikoku and Kyushu).

*Australosepsis frontalis* (WALKER)

[Japanese name: Chibi-tsuyahosobae]

*Sepsis frontalis* WALKER, 1860, J. Proc. Linn. Soc. Lond. Zool. 4: 163.

*Australosepsis frontalis*: ZUSKA, 1968, Acta ent. bohemoslov. 65: 472.

*Distribution.* Widely distributed in the Oriental Region; New Caledonia; Japan (Okinawa).

*Australosepsis niveipennis* (BECKER)

[Japanese name: Haguro-chibi-tsuyahosobae]

*Australosepsis neveipennis* BECKER, 1903, Mitt. zool. Mus. Berl. 2: 143.

*Australosepsis niveipennis*: HENNIG, 1941, Arb. morph. taxon. Ent. Berl. 8: 146.

*Distribution.* Widely distributed in the Oriental, Afrotropical and Australasian Regions; Japan (Okinawa).

*Dicranosepsis bicolor* (WIEDEMANN)

[Japanese name: Kiashi-tsuyahosobae]

*Sepsis bicolor* WIEDEMANN, 1830, Auss. zweifl. Insekt. 2: 468.

*Dicranosepsis bicolor*: ZUSKA, 1970, Acta ent. bohemoslov. 67: 50.

*Distribution.* Widely distributed in the Oriental and Australasian Regions;

Japan (Over the country).

*Sepsis albopunctata* LAMB

[Japanese name: Fusatoge-tsuyahosobae]

*Sepsis albopunctata* LAMB, 1914, Trans. Linn. Soc. Lond. 2, 16: 323.

*Distribution.* Widely distributed in the Oriental, Afrotropical and Australasian Regions; Japan (Honshu, Kyushu and Okinawa).

*Sepsis coprophila* DE MEIJERE

[Japanese name: Nagao-tsuyahosobae]

*Sepsis coprophila* DE MEIJERE, 1906, Annls hist.-nat. Mus. natn. hung. 4: 176.

*Distribution.* Oriental Region; Japan (Kyushu and Okinawa).

*Sepsis indica* WIEDEMANN

[Japanese name: Indo-tsuyahosobae]

*Sepsis indica* WIEDEMANN, 1824, Analecta Ent.: 57.

*Distribution.* Oriental Region; Japan (Hokkaido, Honshu, Kyushu and Okinawa).

*Sepsis lateralis* WIEDEMANN

[Japanese name: Minami-tsuyahosobae]

*Sepsis lateralis* WIEDEMANN, 1830, Auss. zweifl. Insekt. 2: 468.

*Distribution.* Oriental and Afrotropical Regions, Mediterranean subregion, Papua New Guinea; Japan (Kyushu, Okinawa).

*Sepsis nitens* WIEDEMANN

[Japanese name: Kibuashi-tsuyahosobae]

*Sepsis nitens* WIEDEMANN, 1824, Analecta Ent.: 57.

*Distribution.* Oriental and Australasian Regions; Japan (Okinawa).

*Sepsis thoracica* (ROBINEAU-DESVOIDY)

[Japanese name: Osuaka-tsuyahosobae]

*Micropeza thoracica* ROBINEAU-DESVOIDY, 1830, Essai Myodaires 2: 742.

*Sepsis thoracica*: DUDA, 1926, Annln naturh. Mus. Wien **40**: 37.

**Distribution.** Widely distributed in the Palaearctic, Afrotropical and Oriental Regions; Japan (Over the country).

***Sepsis monostigma* THOMSON**

[Japanese name: Hitoten-tsuyahosobae]

(Figs. 14–15)

*Sepsis monostigma* THOMSON, 1869, Fregatten Eugenies Resa Zool. **2**(1): 587.

*Sepsis latiforceps* DUDA, 1926, Annln naturh. Mus. Wien, **40**: 67.

HENNIG (1949) synonymized *S. latiforceps* DUDA with *S. monostigma* THOMSON, but ZUSKA (1977) and ZUSKA & PONT (1984) treated *S. latiforceps* as a good species. In 1990, the author examined the specimens of *S. monostigma* and *S. latiforceps* determined by ZUSKA, preserved in British Museum (Nat. Hist). As a result of the examination, it was confirmed that the specimens determined as *S. monostigma* are *S. punctum* (FABRICIUS), while those determined as *S. latiforceps* are *S. monostigma* THOMSON. *S. punctum* is a Palaearctic species, but it occurs in high altitude in the Oriental Region (IWASA, 1987). It is considered that *S. monostigma* and *S. punctum* in the Oriental Region have been confusedly treated by some western authors for a dearth of the specimens. The discriminative character of *monostigma* from *punctum* except the structure of male fore femur is found in male surstylus (Figs. 14 and 15).

**Specimens examined.** See IWASA (1980).

**Distribution.** Oriental Region, Russia (?), South Korea; Japan (Over the country).

***Sepsis punctum* (FABRICIUS)**

[Japanese name: Nise-hitoten-tsuyahosobae]

*Musca punctum* FABRICIUS, 1794, Ent. Syst. **4**: 351.

*Sepsis punctum*: DUDA, 1925, Annln naturh. Mus. Wien, **39**: 111.

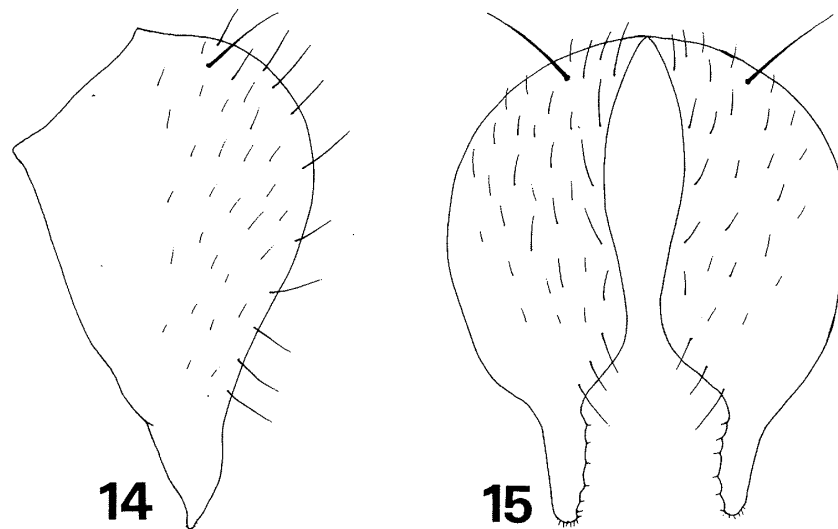
**Distribution.** Europe, North Africa, Middle and Near East, Russia, Taiwan; Japan (Hokkaido, Honshu and Kyushu).

***Sepsis bicornuta* OZEROV**

[Japanese name: Ozerobu-tsuyahosobae]

*Sepsis bicornuta* OZEROV, 1985, Ent. Obozr. **64**: 841.

Illustrations of male legs and male genitalia based on the specimens from



Figs. 14–15. *Sepsis monostigma* THOMSON — 14, male genitalia (left, lateral view); 15, ditto (posterior view).

South Korea were given by IWASA *et al.* (1994). This species is very rare in Japan.

*Specimens examined.* 1♂, Hirosaki Park, Hirosaki, Aomori Pref., 21 Sep. 1965, S. FUKUSHI; 1♂, Hasedera, Sakurai, Nara, 18 June 1978, M. KASAGI.

*Distribution.* Russia (Far East: Ussuriysk District), South Korea; Japan (Honshu). New to Japan.

*Remarks.* Relationships with other species was noted by IWASA *et al.* (1994).

### *Sepsis violacea* MEIGEN

[Japanese name: Miyama-hitoten-tsuyahosobae]

*Sepsis violacea* MEIGEN, 1826, Syst. Besch. 5: 289.

*Distribution.* Europe, North Africa, Middle and Near East, Russia; Japan (Hokkaido).

### *Sepsis duplicata* HALIDAY

[Japanese name: Kogata-tsuyahosobae]

*Sepsis duplicata* HALIDAY, 1838, Ann. nat. Hist. 2: 186.

*Distribution.* Europe, Russia; Japan (Hokkaido).

*Sepsis cynipsea* (LINNAEUS)

[Japanese name: Nami-tsuyahosobae]

*Musca cynipsea* LINNAEUS, 1758, Syst. Nat. Ed. 1: 459.

*Sepsis cynipsea*: Duda, 1925, Annln. naturh. Mus. Wien, 39: 130.

*Distribution.* Europe, North Africa, Russia, Mongol; Japan (Hokkaido).

*Sepsis neocynipsea* MELANDER et SPULER

[Japanese name: Nami-kuro-tsuyahosobae]

*Sepsis neocynipsea* MELANDER et SPULER, 1917, Bull. Wash. Agric. Exper. Sta. 143: 28.

FUKUHARA (1964) recorded this species from Japan (Honshu), but no materials are available in the present study.

*Distribution.* Europe, Nearctic Region, Central Asia, Russia; Japan (Honshu).

*Sepsis flavimana* MEIGEN

[Japanese name: Usuguro-tsuyahosobae]

*Sepsis flavimana* MEIGEN, 1826, Syst. Besch. 5: 288.

*Distribution.* Europe, Middle East, Russia, Nearctic Region; Japan (Hokkaido).

*Sepsis nigripes* MEIGEN

[Japanese name: Chibikuro-tsuyahosobae]

*Sepsis nigripes* MEIGEN, 1826, Syst. Besch. 5: 289.

*Distribution.* Europe, Russia; Japan (Hokkaido).

**Acknowledgements**

The author wishes to express his sincere thanks to Dr. A. L. OZEROV of Moscow State University, Russia and J. ZUSKA of Institute of Food Industry, Czecho for their kind advices for identification of the specimens examined. The author is much grateful to Prof. Emeritus R. KANO of Tokyo Medical and Dental University for his kindness in offering the valuable materials. Thanks are also due to Prof. K. HORI of Obihiro University of Agriculture and Veterinary Medicine for his continuous encouragements.



## References

- DUDA, O., 1925. Monographie der Sepsiden (Dipt.). I. *Annln naturh. Mus. Wien.*, **39**: 1–153.
- ELBERG, K., 1963. *Themira paludosa* sp. n. (Diptera, Sepsidae) aus Estland. *Ent. Obozr.*, **42**: 909–911. (In Russian.)
- FUKUHARA, N., 1963. Sepsidae in Japan. Abstract of the Third Annual Meeting of the Ent. Soc. Japan., Kanto Branch. 1–2. (In Japanese.)
- HENNIG, W., 1949. Family Sepsidae. In LINDNER, E. (ed.), *Die Fliegen der palaearktischen Region.*, **5**(1): 1–91. Schweizerbart, Stuttgart.
- IWASA, M., 1980. Studies on the Sepsidae from Japan (Diptera). I. Revision of the genus *Sepsis* FALLÉN, with a key to the Japanese genera. *Kontyû, Tokyo*, **48**: 402–413.
- 1981. Studies on the Sepsidae from Japan (Diptera). II. Notes on the genus *Themira* ROBINEAU-DESVOIDY, with descriptions of two new species. *Kontyû, Tokyo*, **49**: 45–53.
- 1984. Studies on the Sepsidae from Japan (Diptera). III. On the eleven species of eight genera excluding the genera *Sepsis* FALLÉN and *Themira* R.-D., with description of a new species. *Kontyû, Tokyo*, **52**: 296–308.
- 1985. Supplementary notes on the Sepsidae (Diptera) from Japan (Diptera). *Kontyû, Tokyo*, **53**: 632–638.
- 1987. The Sepsidae from Taiwan (Diptera). *Sieboldia*, Suppl.: 1–9.
- IWASA, M., K. KANMIYA and C. E. LEE, 1994. Notes on the Sepsidae (Diptera) from South Korea. *Esakia, Fukuoka*, No. 34, pp. 203–208.
- OZEROV, A. L., 1983. Notes on Sepsidae (Diptera) of the Far East. *Ent. Obozr.*, **62**: 839–844 (In Russian.)
- 1985a. New and little known species of the Sepsidae from the Far East. *Ent. Obozr.*, **64**: 839–844. (In Russian.)
- 1985b. To the taxonomy of the genus *Ortalischema* (Diptera, Sepsidae). *Zool. J.*, **64**: 1267–1269. (In Russian.)
- 1986a. To the knowledge of Sepsidae (Diptera) of the fauna of the USSR. *Ent. Obozr.*, **65**: 639–643. (In Russian.)
- 1986b. A review of Palaearctic species of the <leachi> group in the genus *Themira* R.-D. (Diptera, Sepsidae) with description of a new species, *Themira prewalskii* sp. n. *Bull. Moscow Soc. naturalists*, Biol. ser., **91**: 51–54. (In Russian.)
- 1989. Flies of the families Sepsidae and Piophilidae (Diptera) of the Zejskij State Nature Preserve. *Ent. Obozr.*, **68**: 839–849. (In Russian.)
- PONT, A. C., 1979. Diptera Cyclorrhapha, Acalypterata. Sepsidae. In *Handbk Ident. Br. Insects*, **10** 5(c): 1–35.
- SOÓS, A., 1972. Taxonomische und faunistische Untersuchungen über die mongolischen Sepsidae (Diptera). *Acta zool. Acad. Sci. Hung.*, **18**(3–4): 353–370.
- ZUSKA, J., 1974. Asian *Themira* (Diptera: Sepsidae): Descriptions of two new species and distributional notes. *Proc. ent. Soc. Wash.*, **76**: 190–197.
- 1977. Family Sepsidae. In DELFINADO, M. D. and D. E. HARDY (ed.), *A Catalog of the Diptera of the Oriental Region.*, **3**: 174–181. Univ. Hawaii Press, Honolulu.
- ZUSKA, J. and A. C. PONT, 1984. Family Sepsidae. In SOÓS, A. and L. PAPP (eds.), *Catalogue of Palaearctic Diptera*. **9**: 154–167. Akad. Kaid., Budapest.

(Received December 20, 1994; Accepted April 12, 1995)